

Environmental Impact Statement
for
Waimanalo Beach State Recreation Area
by
Division of State Parks
Outdoor Recreation and Historic Sites
Department of Land and Natural Resources

Honolulu, Hawaii

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I. INTRODUCTION

A general plan was developed for Waimanalo Bay State Recreation Area by the consultant firm of Oberlander, Bush and Cave in January, 1972. Pertinent planning factors and potential uses of the site are included in this study as well as the long-range general plan itself. This plan extends beyond the 75-acre site which is the subject of this environmental impact statement and includes adjacent land which is now administered by the Federal government. In fact, a major purpose of the general plan was to consider all possible uses of the 75-acre site and surrounding area in order to achieve some agreement among all possible user interests for the area. Much of the material for this environmental impact statement is taken directly from the consultant's plan.

First increment construction plans involve roughly one-third of the 75-acre site and include perimeter fencing, beach development, backshore protection, picnicking, and camping facilities. An irrigation system, landscaping, maintenance facilities and a caretaker's house will be included. Total cost is approximately \$575,000 with Federal cost sharing available for most features. Further increments are dependent on additional appropriations which are being requested.

II. REGIONAL SETTING AND GENERAL DESCRIPTION OF THE AREA

Waimanalo is located on the easternmost shore of Oahu about five miles from Kailua, the nearest urban center. It is 14 miles from central Honolulu over the Pali Highway, 9 miles to Kaneohe via Kam Highway, and 18 miles to Honolulu International Airport. The other route into Honolulu is the scenic winding road around Koko Head which passes several beach parks along the rugged spectacular coastline.

The nearest hotel resort center is Waikiki, about 18 miles from Waimanalo. There are several recreational facilities close to Waimanalo; Sea Life Park, a marine research and public display facility which attracts several thousand visitors on peak days, two golf courses within a few miles driving, three horseback riding academies adjacent to the

area, and several City and County beach parks along the coastline.

Kailua is the nearest shopping area with any significant concentration of stores. There are a few superettes and drive-ins in Waimanalo, but none are of the chain store variety to be found in Kailua.

The nearest medical facilities are also to be found in Kailua, with Castle Memorial Hospital at the junction of Kam Highway and Kailua Road, and various medical offices and clinics in central Kailua.

Police protection is supplied from a sub-station in Kailua, with headquarters in Kaneohe. Fire Protection and Prevention is from the one City and County fire station in Waimanalo, which has one truck and five men on duty at all times. Facilities from the central station, Honolulu, including a helicopter, are available, as are ambulance and first aid facilities at a unit near the fire station.

There are two schools near the area; Blanche Pope, which is an ungraded elementary school, and Waimanalo School, which has grades kindergarten through eighth. Kailua High School serves Waimanalo.

The Hawaii State Department of Health has a special project in Waimanalo with various divisions emphasizing such things as children and youth activities, health education in schools, and psychiatric counseling. The Hawaii Office of Economic Opportunity also has a special youth project in Waimanalo under its Community Action Program.

III. EXISTING PHYSICAL CHARACTERISTICS OF THE SITE

Present Land Use

County General Plan of Waimanalo Valley - The official adopted Detailed Land Use Map (DLUM) together with a proposed new highway location is found on Plate 4. This reflects the Oahu General Plan for the Waimanalo area. Other plans pertinent to the study are "A General Plan of Waimanalo Valley 1961" and "An Action Program for Waimanalo Valley 1961" by Bartholomew and Associates. There is an ongoing planning program by the Department of Land and Natural Resources for Waimanalo Valley and this study is being coordinated with that program.

Existing Use of Site

At the present time, the beach area is being used primarily

for weekend recreation. The existing roads are open to the public and one temporary restroom was for a time maintained for the public. The beach is certainly not being used to its potential capacity but peak use periods do consist of a liberal scattering of recreationists. Current use is restricted to the foreshore and backshore the remaining area is covered with trees and/or brush plus a steadily increasing accumulation of abandoned cars and other discarded items. For a time, camping was allowed but this had to be discontinued because of surveillance problems. The site is an abandoned military recreation area. No buildings remain but a complex of roads and utilities still exists.

Climate

The study area, being located on Windward Oahu, has a climate that is typical of that portion of Oahu. Characteristically, it has slightly more rainfall and is more exposed to the trade winds and salty air than the leeward coast. Frequently, the mornings are clear and sunny, afternoons are apt to be cloudy because of the build-up of cover over the Koolau Range, and there are occasional light showers at night. Plate 6 contains detailed climatic data for the project area.

Topography

The project site varies from sea level to a maximum of 20 feet above sea level, and the average elevation is approximately 12 feet and forms a series of irregular sand dunes with very gentle slopes.

Soils

The major part of the project site behind the beach is covered with Jaucas sand which is usually found in an area with a slope of 0-15%, but in this instance the project site is fairly level, with no more than a 3% slope from the beach to the back of the site. Jaucas sand is an excessively well-drained soil composed of very fine-grained coral sand with rapid permeability. Water erosion hazard is slight but wind erosion hazard is severe if vegetation is removed. This soil has landscaping limitations because its water-holding capacity is low. Play areas where there are organized games would have severe limitations because a nearly level, firm surface would be required and Jaucas sand does not provide this.

The use or construction limitations may be overcome with

special treatment such as soil amendment, topsoil layers or fill.

Land along the highway at the edge of the project site is Mokuleia loam, a well-drained dark grayish brown soil with depths ranging from 12" to 30" topsoil with subsoil 5' to bedrock and formed from alluvium deposited over coral sand. Permeability is moderate in the surface layer and rapid in the subsoil. Irrigation makes this soil very productive.

A pocket of Ewa silty clay is to be found at the corner made by the boundary of Bellows Air Force Base and the highway. This is a dark reddish brown soil, well drained. Agricultural production from this soil is excellent with irrigation.

Plant Growth

Approximately 60% of the project site is covered with a heavy growth of Ironwood trees (*Casuarina equisetifolia*), many of which are 50 to 60 feet in height. There are a few young coconut trees along the shoreline and Beach Naupaka (*Scaevola frutescens* var. *sericea*) [see Plate 8]. The remaining areas are open sand or low grass.

Utilities

The project site is well served with public water supply, power and telephone. A new sewer treatment plant is now in use and this will serve the future park as it now serves adjacent urban developments. Utilities location and sizes are shown on Plat 8. All proposed park facilities will be connected to the public utility services.

Historic Considerations

Areas of possible archaeological importance are known in Bellows Field, including at least one within the project area. This knowledge led to the project area being included in Bellows Field Archaeological Area, a property on the National Register of Historic Places.

In order to comply with the National Historic Preservation Act of 1966, an agreement has been entered into with the Advisory Council of Historic Preservation. In accordance with this contract the Department of Land and Natural Resources has contracted with an archaeological research firm, who has test cored and test excavated all areas where proposed construction work would entail subsurface excavations, such as areas to be graded, and proposed

utility ditches. This survey disclosed one site of such importance that it will be completely excavated. This site and others investigated are indicated on Plate 8. Further mitigation of adverse effects is discussed under VI, below.

Flooding

The Inaole stream is an intermittent water course which drains the agricultural areas south of Waimanalo town. The stream was rerouted to the northwest in 1960 to pass around the Nike missile site construction, but its mouth was left unchanged. Limited tidal circulation occurs near the mouth where a shallow pond exists at times of low stream discharge.

Flooding has frequently occurred along the middle reaches of this stream, particularly inland of Kalaniana'ole Highway which apparently has too limited openings for drainage. A map and report on the 1965 flood by Lee and Chang does not accurately portray the Nike missile site construction or the stream position, and the flooding areas shown there may not be correct for the roadside part of Sherwood Forest. The flooding they documented for that storm had a five-year recurrence cycle, so flooding on the inland part of the new park has a high annual probability and a high probability for more extensive flooding. Flooding is not a problem in the coastal region due to the higher topography of the sand dunes which back the beach and the good internal drainage of this sandy area. The U. S. Geological Survey in cooperation with the Department of Land and Natural Resources conducted a study of floods in Waimanalo and the results are shown on Plate 8. A flood control program is being developed which should protect the project area. It provides a graded channel for Inaole Stream course with planted banks along the proposed park boundary.

Pollution

Several times during 1970 a darker reddish discharge was observed to discolor large portions of Waimanalo Bay and apparently issue from the Waimanalo and Inaole Streams. The primary cause of this appears to be run-off from agricultural areas, both soils and organic materials. Examination of the sea bottom near these sources does not reveal any deleterious effects from silting or other causes. The fine size of the particulate matter appears to keep it in suspension long enough for wide dispersal, and is at the same time responsible for the prominent visibility of

the run-off. Settling basins in the stream have been considered, but they are known to have limited effect on such fine particulates.

The ponded water at the lower end of Inaole Stream looks and smells polluted with organic wastes. Community action was taken to restrict discharge into this stream from a dairy farm far back in the valley and the farm complied. However, some run-off or seepage from that area persists. Residents in the Waimanalo Beach community view the stream with concern as a source for foot and other infections to children playing in that vicinity. Microscopic examination of the stream water showed bacteria to be present, but a count of their frequency or identification of this variety was not attempted. The Department of Health should be requested to monitor the waters of this stream and either take action to correct conditions, if correction is needed, or to publicize the results of an acceptable measurement level for their indicators. If allowed to persist or increase, the odors and particulate matter from this discharge could restrict the use of the adjacent public beach.

The studies made for the ocean sewer outfall in 1962-1964 showed two problems for its development: first, the restricted circulation which occurs within deeper parts of Waimanalo Bay because of the submerged fringing reef; and second, the persistence with which floatable materials would be carried onto the beach by the prevailing winds. For these reasons, the presently operating plant has been designed to remove 75 to 85 percent of the incoming floatable material and 95 percent of the persistent floatable materials. Should the installed injection well system fail, the State has agreed to construct an ocean outfall of suitable length, depth and diffuser design to prevent any pollution or esthetic problems.

Tides and Tsunamis

The diurnal tide range is 1.8 feet in Waimanalo Bay. The tidal effect on the beach and shoreline is small compared to the effect of storm waves on this coast.

Shoreline rise due to Tsunamis has been observed along Waimanalo Bay in 1946, 1952, and 1960. All produced a maximum shoreline rise of about nine feet. No shore erosion or property damage was reported.

III. WAIMANALO BAY, ITS SHORELINE AND MANAGEMENT CONSIDERATIONS

The main recreation resources are Waimanalo Bay and the sandy beach along the shoreline. Because the preservation of these resources is imperative, special emphasis has been placed on them. This study was done by John Belshé as a special study for R. Bush, our main consultant.

Waimanalo Beach System

Waimanalo Bay is essentially one self-contained littoral cell. In what follows, we will consider the general littoral processes as they apply to the specific conditions of the bay.

The Waimanalo Beach is the longest on Oahu, extending for about 3-1/2 miles. It is continuous around all of the bay, but is narrow and rocky along the southeastern end. To the north it terminates against a basaltic dike at Wailea Point. The beach foreshore has a gentle shape and its width is 120-150 feet in the area of the Beach Park. It is composed of medium to medium-fine sand. The principal sand materials are all calcareous: particles of foraminifera and mollusc shells, calcareous algae fragments, and pieces of coral.

Offshore sand patches and the reef flat extend for about 1,500 feet to the reef edge. The fringing reef is about 10-12 feet deep off the central portion of the beach but quite shallow in both the northwest and southeast portions of the bay.

The prevailing winds on this side of Oahu are directed inland. Their dominant direct affect on the beach sand is to carry it inland, removing it from the beach system and only rarely to carry it offshore where it is recycled.

The Waimanalo Beach Park lies in the central portion of Waimanalo Bay where the shoreline is normal to the prevailing trade winds. These winds occur 85% of the time. They produce only slight longshore currents since being generally perpendicular to the coast they have little or no component parallel to the shoreline. On both sides of the bay, towards Wailea Point or Manana Island, the wind vector's projection onto the shoreline results in a wind-driven current component which points towards the central portion of the bay. The wind-driven currents thus act to concentrate sand along the Waimanalo Beach Park. These relationships are illustrated on Figure 1.

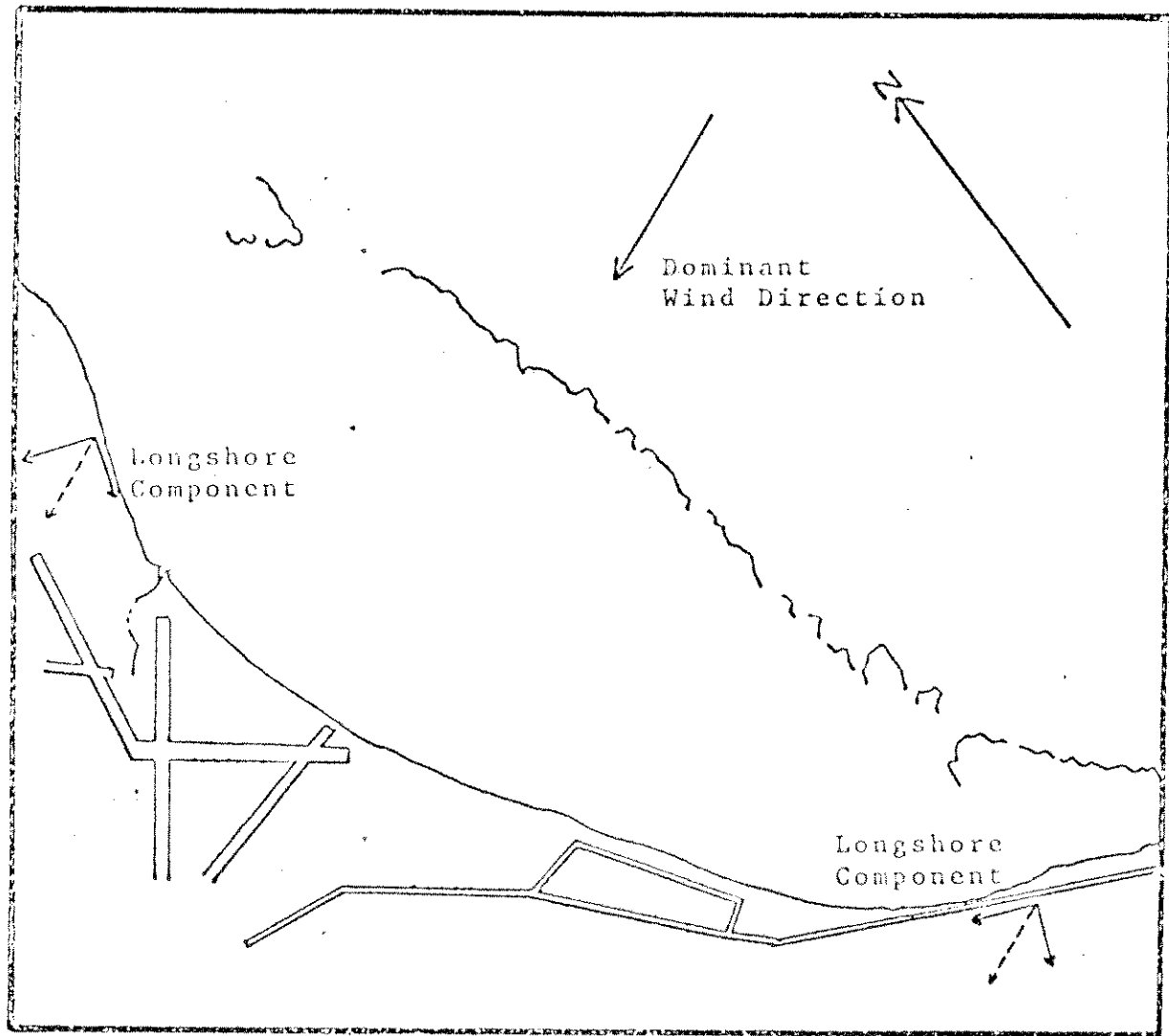


Figure 1

Illustration of the Convergence of
Longshore Wind Components in Waimanalo Bay

Over the course of geologic time these longshore currents have caused the coastline of the central portion of Waimanalo Bay to extend seaward. At the end of the ice ages, the Bay was formed by a marine transgression which flooded a broad coastal valley. The Waimanalo Stream at that time extended seaward along the course of a major sand channel which runs out through the reef from near the present mouth of this stream.

Additional longshore sediment transport occurs which is driven by tidal currents. Waimanalo Bay is near the point of tidal current divergence for Oahu during the flood portion of the tidal cycle. This causes some irregularity due to the tidal currents and occasional reversals of the current direction. Both the coastal current studies made of the Hawaiian Island (Laevastu, et al) and recent studies of the Makapuu Oceanic Center show that the northwestward direction predominates in the tidal current flow off Waimanalo. However, detailed investigations within the Bay for the sewage ocean outfall report show that this tidal current is much diminished inside the reef edge. This tidal current is of minor importance compared to the wind-driven currents inside the Bay.

Waves move sand on and off the beach and because of the weakness of the longshore currents in the central portion of Waimanalo Bay, they are the dominant transport mechanism affecting the beach. Measurements of the accretion and erosion of this beach reflect the dynamic exchange of sand between the beach reservoir and the offshore reservoirs existing on the reef flat. Together these reservoirs constitute the largest littoral sand deposit known on Oahu. When the waves are high and breaking strongly on the shore, sand is kept in suspension and carried to the offshore reservoir by rip currents. During this period the beach erodes. When the waves are moderate, breaking primarily along the reef face, the incoming wave picks up sand from the offshore reservoirs and deposits it on the beach with its run-up. Then the beach accretes.

Some sand is eventually lost from the offshore reservoirs through transport seaward down sand channels, through the reef along surge channels, or across the reef edge in suspension. This loss to the system is balanced by new sand formed biologically along the reef edge or by erosion of the rocky coastal portions at both side of Waimanalo Bay.

It appears that the beach is presently in equilibrium and the effects causing aggradation and degradation balance when

averaged over several annual cycles of change. This conclusion is based on two separate investigations: 1. An examination of aerial photographs taken along the coast in 1971, 1970, 1969, 1967, 1963, and 1952. 2. Direct measurement and comparison of beach profiles made during the period 1962-1963 (6), Feb. 1964, Dec. 1970, and April 1971.

Two effects, both related to vegetation, appear able to upset this balance. First, seaward growth of shrubs and trees can establish cover beyond the shallow scarp or dune line which marks the extreme run-up of storm waves onto the backbeach. In the Sherwood Forest area such a seaward extension of ironwood trees proceeded for over eight years, commencing about the time the Air Force vacated the area (1959-1960). Then in 1968, high waves cut back this vegetation line and there has been a continuing retreat until the present, which seems to be reestablishing the earlier coastline. Slightly south, near the fourth lot of beach homes, such uncontrolled plant growth began before 1955 and this has so far successfully trapped sufficient additional sand as to extend the permanent coastline seaward as marked by a slight convexity in the shoreline at this point. These observations make it appear that extreme surf erosion occurs along this coast with a frequency of about 10 years, or comparable to the flood frequencies of 5 and 13 years for the Inaole and Waimanalo Streams documented by Lee and Chang. Since the growth of vegetation can act on a comparable scale, it can be an agent to assist beach accretion.

Second, the removal of vegetative cover can also upset the present equilibrium balance. With respect to wave erosion, this might result in a landward retreat of the sea scarp and dune line until a gentle beach profile was established on which extreme wave run-up could be dissipated without extreme sand removal. Then a new equilibrium would be established. Unfortunately, the removal of sand by wind from the beach zone would proceed at such a rate as to delay the attainment of this equilibrium and probably prevent it ever being established. Continued coastal retreat could be the consequence. Such tendencies appear in an examination of the coastal features where vegetation was scarce near the Air Force beach cabins once placed along Sherwood Forest. They appear again in the sand movements which have occurred along the southeastern retaining wall of Inaole Stream where it was breached in 1968-1969. The retention of a vegetation line along the coastal scarp appears necessary for the retention of the present beach equilibrium.

Waimanalo Bay, Reef and Offshore Features

The natural environments within Waimanalo Bay divide into the areas of sand deposits and those of coral reef. Much of the massive coral reef structure is actually formed by the secretion of calcareous algae.

The sand deposits may occur in sand channels, in large sand reservoirs, or as small irregular depressions on the reef flat. There are two forms of sand channel within Waimanalo Bay. Numerous channels of a 3 to 10 foot width, aligned roughly normal to the coast, cut into the reef flat. They become very numerous as the reef edge is approached. Wider, rather shallow, channels also occur. The most evident of these is the major one in the northern sector of the bay which marks a former seaward extension of Waimanalo Stream. Small sand pockets are frequent throughout the bay. A major sand reservoir occurs offshore from the Bellows Airfield beach.

On the reef flat there are some areas of dense coral reef with little sand cover. Such areas are particularly abundant in the southern third of the bay and immediately south of the Mokulua Islands at the northern end of the bay. Massive reef structures occur between the small sand channels at the outer edge of the reef.

Waves

No comprehensive study of the seasonal variations of nearshore wave conditions in Waimanalo Bay has ever been undertaken. The primary breaker line occurs along the reef edge in water depths of 10 to 30 feet. There is rapid energy loss and wave dissipation shoreward of this.

A general summary of waves in Hawaiian waters is contained in the Hawaiian Beach Systems report (pages 25-33) by Moberly and Chamberlain (1964). They make extensive use of a 1963 report on deep-water waves in the Oahu area which was prepared by Marine Advisers for the Board of Harbor Commissioners, State of Hawaii. This source is also used by the authors of the Waimanalo Ocean Outfall report (Division of Water and Land Development, 1964).

The percentage of deep water waves approaching Waimanalo from the N to E compass quadrant that will break in 18 feet or more was estimated at 6%. The majority of these waves will come from directions nearer east than north during the period between April and November, but the more northerly waves will have the higher amplitudes and long

period and occur most frequently from October through May. These are, respectively, the Northeast Trade Waves, and the North Pacific Swell.

Shoreline Management

Foreshore

That portion of the beach extending from the low water line to the swash line of the high tide is called foreshore. Along the Waimanalo Beach its width averages over 100 feet and its slope is gentle.

This region undergoes seasonal fluctuations which generally average out over an annual cycle. During periods of strong trade winds it generally shows a loss of sand whereas during prolonged Kona conditions it generally gains sand or accretes.

Because the major sand transport is to and from the beach, and not along the shore, groins would not be effective in adding stability to the foreshore. The appropriate construction to add stability to this zone would be a detached breakwater which would prevent large waves from breaking in on the beach. The gains from such constructions along this beach do not appear sufficient to warrant the high cost of their construction.

It is recommended that no constructions be undertaken for the purpose of increasing beach stability.

If the possibility that the former Nike missile launching site and adjacent area will be added to the park is realized, the consultant's recommendations below will be followed:

Jetties have been built out on both sides of the two streams which cross the Waimanalo Beach, the Inaole Stream at the northwest end of Sherwood Forest and the Waimanalo Stream within the Bellows Air Force Station. The purpose of these jetties is to stabilize the mouths of these streams and prevent their wandering laterally along the beach. These jetties extend sufficiently far offshore to prevent sand bypassing them when carried by longshore currents, and some asymmetry can be expected to develop in the amount of sand deposited on either side as wave and current directions change. Yet examination of the adjacent beaches and observations of aerial photographs show any long-term asymmetry to be slight, attesting to major sand movement being normal to the beach.

The stabilization of the place where the stream discharges adds stability to the adjacent beach areas and to their immediate nearshore environment.

It is recommended that these stream mouth protection walls, or jetties be retained and kept in repair.

The wall along the south side of the Inaole Stream was breached during high surf occurring first in 1968 and later in 1969 and 1970. Some sand was carried inland and now partially blocks the lower portion of the stream channel. The concurrent removal of some vegetation along this wall has exposed sand banks to wind erosion and some sand is being lost inland as well as into the stream channel. This bank should be repaired by reestablishing its former line and assisting vegetation to grow back along it. The seaward face of the bank will need some armor stone to protect it. This would best be replaced with such considerations of stone size and openness of structure as to increase the dissipation of wave energy when waves break against it. Such design practice does not appear to have been followed in the seawall construction recently constructed near the northern limit of the Bellows beach, and presumably was not in the earlier jetty constructions. Improved design from constructions to maintain or repair the jetties along the stream banks should reduce the frequency and costs of repairs to these structures.

The rock underlying the beach has a slope similar to that of the sand surface. The sand cover is generally 6 to 10 feet thick. Any permanent constructions made on or across the beach should extend down to this underlying rock. This construction practice does not seem to be rigidly followed in some of the rock structures built in the area and threatens eventual undercutting of such structures.

The foreshore generally shows shallow concave depressions 30 feet or more in width facing seaward. These cusps indicate the frequency of minor offshore currents, weak rip currents, which carry back the excess water piled against the shore by waves. They are a natural part of the dynamic interaction between the beach sand and that held in reservoirs on the reef flat.

Nearshore

Immediately offshore sand covers the bottom along this

entire beach. Large patches of sand are interspersed with area of rocky bottom across the wide reef flat. Some rock areas are covered with rounded cobbles. Often the rocky bottom areas nearest shore are densely covered by short stands of algae and seaweed. There is a sufficiency of sandy bottom areas to provide for the needs of swimmers. It is not recommended that dredging or other bottom clearing be undertaken along this beach park.

Over the further parts of the reef flat surge channels occur and become increasingly frequent as the reef edge is approached. Sea floor relief which may be as little as one foot over several tens of feet near shore now increase to 3 to 5 feet. This edge is 1,500 yards or more from the Sherwood Forest shoreline.

Offshore

The reef off Waimanalo Bay is a fringing reef and lies about one mile distant from the shore except towards the southeastern side where it closes to about 500 yards. In this southeastern portion the reef is very shallow as is also the case to the northwest near the Mokulua Islands. In the central portion the reef is deeper, typically 10 to 15 feet below sea level. The reef is cut by numerous surge channels. A major sand channel cuts across it in the northern part of this bay and marks the course of the Waimanalo Stream during a low stand of the sea in the late Pleistocene period of geologic time.

Beyond the reef the bottom drops off uniformly and fairly rapidly. Divers report several scarps or ledges at depths of about 30, 60 and 110 feet which are consistent with submerged terraces known elsewhere on Oahu, but detailed mapping of this bathymetry is not available. The foreslope of the reef is composed of massive algal material. The foreslope is cut by narrow channels which average 3 to 4 feet in width and may be spaced as closely as 10 feet apart. They are floored with sand of which a quarter or more may be living foraminifera.

During strong trade winds the submerged reef forms breakers. Under such conditions it is difficult for small boats to enter or leave Waimanalo Bay. Inside this breaker zone conditions for boating are good. The entire bay can be used by boats of shallow draft if caution is observed around the shoal areas in its northern and southern extremes. From a line due east of the southern edge of the Sherwood Forest beach to the reef shoals immediately south of the Mokulua Islands, a distance of 2-1/2 miles, the bay

has a depth greater than 10 feet and generally deeper than 12 feet, except for a few isolated coral heads which rise to within 6 feet of the surface near the outer edge of the reef flat. It is recommended that the National Ocean Survey (formerly the U. S. Coast and Geodetic Survey) be requested to give high priority to a resurvey of Waimanalo Bay and rapid publication of a small boat navigation chart. Upon completion of the charting some shoal areas should be marked with navigational aids for periods of poor visibility. It might also be desirable for some of the isolated coral heads to be removed.

Backshore

The backshore area of the beach includes the features above the wave action of a normal high tide and extending back to the permanent coast. Along the Waimanalo coast the back-beach terrace or berm frequently reverses slope inland and thus marks the beginning of a series of sand dunes which continue inland. Vegetation frequently covers this back-beach area. Occasionally, the seaward sloping portion of the terrace terminates against a low scarp which high wave action has cut against the area protected by vegetation.

The primary aim of park planning for this region should be to protect the vegetation cover to such a degree that wind erosion does not cause a high loss of sand from the beach to inland dunes. It is recommended that access to the beach from inland parking, picnicking, and recreational areas be along numerous narrow walkways which are laid out conveniently and with a design that encourages their use.

Nonrecreation Uses

The County General Plan proposes medium density residential on half of the 75-acre area and recreation on the remainder. The site is well suited to apartment-residential use providing that this can be made compatible with park development, and providing that taking any portion of land out of park use leaves sufficient land for a complete park development. Resort use has been considered for the area in the past. Currently, there is an overexpansion of resort facilities on Oahu and also this windward location is not ideal for resort development as compared to the leeward shores. The shoreline frontage would be ideally suited to quality residential development. The land is not particularly well suited to agricultural use because of exposure to trade winds, frequent afternoon cloudiness, heavy pressure from intensive type uses and sandy soils.

Housing

Residential use of a part of the project area has been studied in depth. Pertinent evaluation factors are:

Positive Factors:

1. With a good park development for a setting, this site would be the most desirable of all State lands at Waimanalo for housing.
2. The State would be taking advantage of land value appreciation from the park if a residential project were built.
3. There is a need for a range of housing in Waimanalo to meet present shortages as well as anticipated growth.

Negative Factors:

1. A principal asset of this site is ample depth between the shoreline and the highway, and residential development would reduce this depth. Camping opportunities would be sharply curtailed.
2. Residential use would screen the park from the highway and exposure of the park is important to its success.
3. Over a long period of time, it is likely that all of the land within the area proposed for park use will be needed for recreation, though early stages of park improvement may not utilize the entire area.
4. Use of a runway at Bellows for a General Aviation Field would produce air traffic over the park area, and though this would be only light aircraft and daytime operations, the noise and hazards, and associated industrial uses could be objectionable to residential use. However, this use proposed appears to have been abandoned.
5. Park open space adjacent to the present residential neighborhood will be an asset to the community which would be lost if residential projects were built in the park area as an extension to the present community.

Thus the park project appears to be the most productive use of the land at this time and probably the least damaging to the existing environment. Park use is not an irretrievable commitment of resources, so additional urbanization could take place in the unforeseen future.

In light of the above, it is recommended that either:

1. Residential use be omitted from the park area, or
2. 20 to 25 acres be reserved for possible future residential use, along the south side of the present Bellows main gate and along the south side of Inaole Stream, with the proviso that this use capitalize on land values created by the park. This might be done by leasing sites for development by entrepreneurs and earmarking land lease rents to improvements or maintenance of the park. It would be important for the Park Division to retain design approval over the private construction to assure optimum compatibility with park planning and use. This area has, therefore, been committed from current development plans.

Major Values of the Site for Recreation

There are a series of relatively small beach parks starting at Kahala Beach and extending to Waimanalo. All of these parks have serious limitation in size and/or suitable swimming conditions. A serious fault with many beach parks is lack of suitable depth between the beach and the highway and this problem does not exist at the project site. There are no boat launching facilities among the 18 mile coastline between Kailua Bay and Hawaii Kai, and Waimanalo is within this section. There are few good camping areas within this area.

- A significant aspect of Waimanalo Beach is that it is within one-half hour driving time of 65% of the population of Honolulu, either via Nuuanu Pali or around Koko Head, and yet is sufficiently separated from Honolulu so as to have a rural character. Both of these routes are very scenic and particularly conducive to recreation outings. Also, the urban environment of Waimanalo is of a character that is compatible with a quiet type of park use.

A unique and valuable feature of the site is substantial depth, which averages 1,900 feet from the shoreline to the highway. A great majority of the beach parks on Oahu are shallow strips of land. This depth at Waimanalo can serve

many functions in support of the ocean frontage such as parking, picnic grounds, campgrounds, and large open spaces so that the beach and adjacent ocean can be fully utilized.

Potential Park Uses

Beach Use - A 1968 City and County Department of Parks and Recreation study indicates that 15% to 20% of the population uses a beach for sunbathing or swimming on a good, sunny day, and there are about 114 days during the year, counting weekends and holidays, when peak loads occur. As the quality and quantity of beach parks increases on Oahu, and as the proportion of families living in medium and high density residential areas increases, the percentage of the population using a beach will increase, so that it would be quite likely that the number of people using a beach on a peak day will double over the next ten years.

The resident population of Oahu in 1970 was 574,281, and the average daily visitor population during the summer was approximately 50,000. On the basis of 15% of the resident population and 20% of the visitor population using the beach on a peak day, the total demand would be 86,000 residents and 10,000 visitors, or nearly 100,000 persons.

At the same percentages, the projected 1990 population and 250% visitor increase, the beach use demand would be approximately 180,000 persons, and if the degree of family use increases as residential density patterns change, it is quite feasible that by 1990 a quarter of a million persons (or nearly one-half the present resident population of Oahu) would go to the beach on a good day, assuming beach space is available. The 1975 Revised State Comprehensive Outdoor Recreation Plan substantiates these demand statistics.

Beach Areas - There are approximately 440 acres of sandy beach on Oahu, of which 180 are in existing parks. Various beach density figures have been utilized, and it is our conclusion that an average of 100 square feet of beach per person is a good maximum design standard. This would indicate a design capacity of 79,000 for the 180 acres of beach park.

A recent State Supreme Court decision determined that all shorelines, including sand beaches up to the "vegetation line" is public land. These beaches are used as a public park beach where they are accessible, but they have no restroom facilities or showers and scant parking. In summation, these data and projections indicate a real shortage of good beach acreage with supporting park facilities.

Picnicking - Picnicking is an important activity at most of Oahu's beach parks simply as an activity associated with going to the beach. Waimanalo may not be quite as popular as the drier, more sheltered leeward parks close to Honolulu but the beach will attract picnickers too. Good windbreaks will alleviate this problem and the sandy soil is generally dry. Cloudy weather, especially in the late afternoon will then be the only major drawback.

Camping - Camping is becoming more and more popular on Oahu and Bellows Beach is the most popular camping area. The project area offers excellent camping opportunities because of the trees and large area between the highway and the beach. No demand analysis has been made but judging from existing permits and the imposed annual limit by the County there is no question of need. The County has indicated they would like to prohibit camping along the narrow beach parks in the Waimanalo area where currently solid rows of tents appear along the highway each weekend. The project area could replace these existing areas. A resident caretaker and gate system is included to improve surveillance.

Water Recreation - Except after heavy rainstorms, the ocean along the beach is clear and colorful. Typical trade winds produce a shore surf which is safe for almost any swimmer, and yet there is enough wave action for body surfing and small board surfing. Offshore, the reef areas are very good for sailing with small catamaran or single hull boats like Sunfish or Sailfish. Winds are usually ample for this kind of sailing and because they blow onshore there is no danger of capsizing or of disabled boats drifting to sea. Because of the small shore break, launching boats from the beach is relatively easy except during heavy surf conditions which occur mostly in winter months.

Court and Field Sports - Organized recreation activities, including court games, baseball, softball, etc. are generally a function of local playgrounds and a responsibility of the County Parks and Recreation Department. Open level areas can be available for such activities at the project site, but only on an informal basis. Organized recreation activities tend to attract participants and spectators who come to an area primarily for this purpose. Consequently, this recreation activity will reduce the number of opportunities for beach and water recreation activities. Since the primary recreation resource is the beach, recreation interests which compete rather than supplement this recreation resource, are undesirable.

VI. DEVELOPMENT REQUIREMENTS FOR THE PROJECT AREA

Basic Concepts and Philosophy

The basic philosophy of this plan is that the project site will be utilized as a beach recreation facility serving all of Oahu. It is assumed that playground type of recreation will be adequately provided in other parks. The concept will be to utilize the offshore areas, beach and inland sand dunes for the most appropriate recreational uses with the emphasis on individual and more passive types of activities.

A basic design concept will be to retain most of the ironwood groves, and to locate various kinds of park uses in enclaves throughout the forest, disturbing the present environment as little as possible. Park visitor overcrowding will be controlled by parking capacities and a reservation system for camping and group picnicking.

Development Requirements and Their Environmental Impact

- Because of potential wind erosion, it is vital that the primary beach dune be stabilized through proper planting and controlled pedestrian circulation. This will also provide a windbreak for mauka areas. Plantings will include hau, hala, coco palms and naupaka along with the ironwoods common to the area. Board walkways, built at an angle to the prevailing wind direction, will be provided at frequent intervals for access to the shoreline.
- Since the beach area is restricted due to the relatively narrow dry sand area, additional sunbathing areas are proposed inland from the primary sand dune. The total area proposed for beach use is approximately 11 acres, and at an average density of 275 persons per acre (160 sq. ft. per person) the sand areas could accommodate 3,000 persons. The inland area will also provide an area sheltered from the wind.
- The windbreak, grassed areas and other new plantings will all require appropriate soil amendment or an irrigation system because of seasonally low rainfall and rapid soil drainage without amendment.
- The State owned beach fronting the residential area adjacent and south of the project is much wider than the beach in front of the project. The open sand

area varies from 50 to approximately 80 feet in width, and the strip above the vegetation line averages approximately 100 feet in width. This beach has a flatter slope, apparently due to a more extensive offshore reef which provides better protection for the beach. Because of the slope, wider sand area, and calmer shore surf, this beach is more desirable for sunbathing and swimming, particularly for very young children. The capacity of this beach for sunbathing is approximately double the capacity of the project area beach. Beach support facilities including parking, rest-rooms and showers will be required within this project to serve not only the beach fronting the 75-acre site, but a shoreline approximately 3,000 feet long on the southeastern side of the site. This area will be restricted to day use only. The parking area servicing it as well as the entire park internal road system, will be gated and the gate closed at night.

- Camping areas totalling approximately 9 acres are proposed. All camping will be located at the north end of the park, separated from adjacent residential areas. Access will be by a single gated road and parking area just for camping. The camping areas will be located far enough back from the beach to allow day users (users not staying overnight) to spill over into this portion of the beach, sharing a restroom and showers. Without approval of the military, campers are not now allowed to use the buffer strip of the Nike site area. A resident caretaker will be available at all times, and the entire area will be security fenced, with gates to be closed at a regulated time, such as 9:00 P.M.
- Three types of picnic areas are proposed:
 1. Beach picnic areas to serve those who combine a picnic with beach activities.
 2. Inland picnic areas, set in shady enclaves within the ironwood forest or on the edge of open space.
 3. Spaces for large group picnics. These would be farthest inland and essentially open areas.

These day use only areas would be located on the south side of the park near the existing residential area. The picnic area will be approximately 17 acres in size.

- Initially, we propose approximately 300 off-street parking spaces for day use in the park, to be located within 300 feet of Kalaniana'ole Highway. The entire park and this parking area will be served by a single divided entrance way located approximately midway between Aloiloi Street and the Bellows Field entrance road. Kalaniana'ole Highway will probably receive more traffic and congestion at the park entrance. Provision of a refuge lane for left turning traffic is being considered. It is assumed this highway may ultimately be relocated. It is also assumed that the large majority of park visitors will come by car and convenient parking will be an effective limiting factor in maintaining the desired number of users. However, provisions will also be made to encourage foot and bicycle access to and within the park.
- Mitigation of effects upon archaeological values has been agreed to with the Advisory Council on Historic Preservation. The survey described in III, above, disclosed one site of importance.

The one site may be of value for the historical information which it may contain, and not for physical features themselves. This makes it possible to mitigate the probable adverse effects by recovering the data through archaeological research while permitting the recreation area project to proceed in other areas not affected by such findings. It is possible that plans to improve this area might still be feasible once the site has been completely excavated as is planned shortly. It is expected that the remains lying below the surface will be similar to those found nearby at a site which yielded the earliest dated information for the Island of Oahu, but out of the project area.

An archaeologist will be stationed on-site during construction excavations to continuously inspect the excavations for signs of archaeological deposits. Should subsurface remains be encountered, the archaeologist is to have the authority to stop construction in the particular area until he and any necessary assistants have satisfactorily evaluated the deposits in, or associated with the construction area.

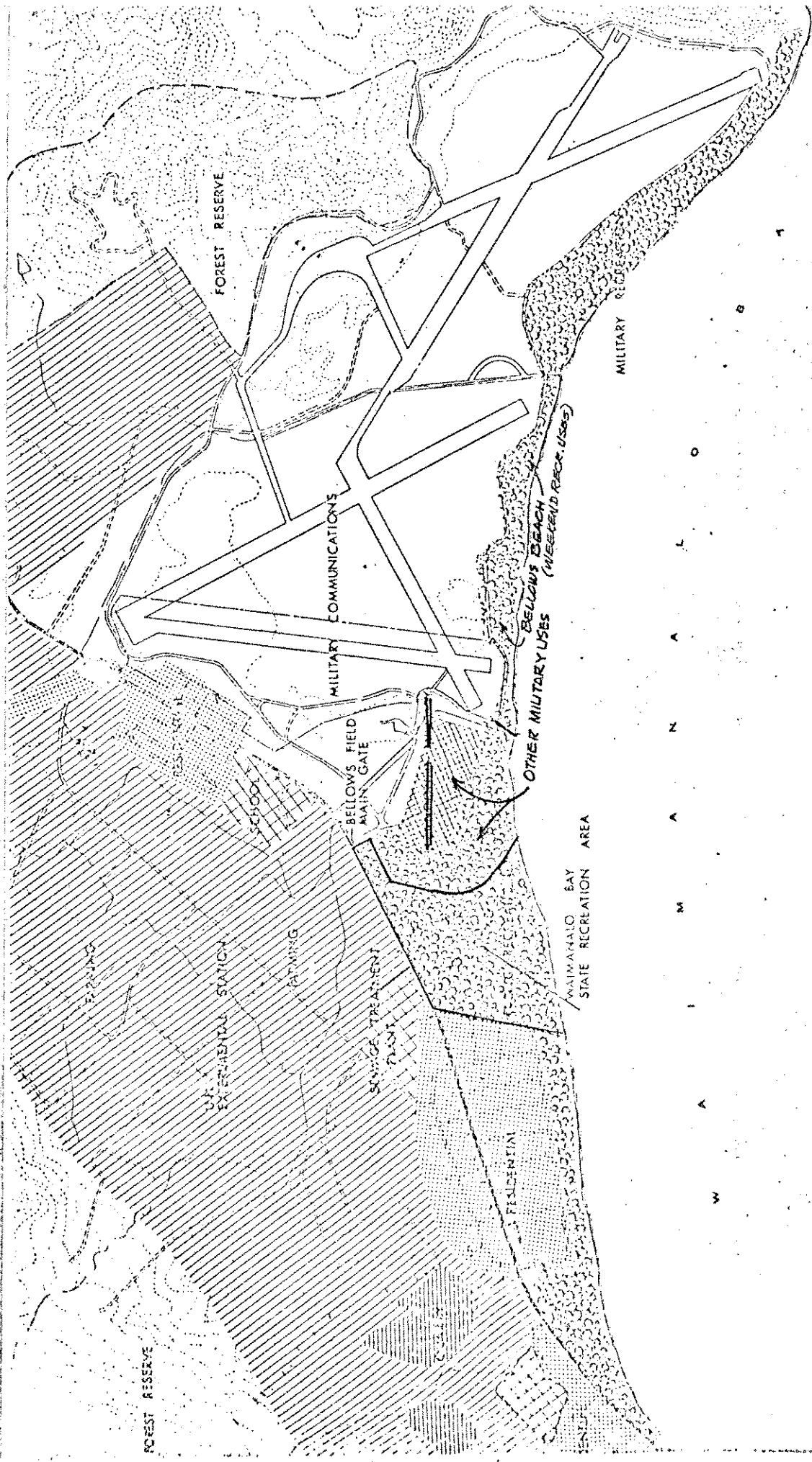
The archaeological contractor will be required to provide a professional certification that the areas are clear of remains as soon as he can. Should the archaeologist determine that the deposits should be preserved, that particular aspect of the project will be redesigned to avoid the remains. Otherwise, the deposits will be excavated to recover all data, including associated data from any extension of the deposit(s) beyond the particular construction trench alignment or area to be graded that the archaeologist believes should be excavated.

Any materials excavated, such as midden debris and artifacts, will be retained by the archaeological contractor for the course of his studies of the sites, and then provisions will be made for the contractor to store all materials, as well as field notes, maps, etc., for the State, with the State retaining all ownership rights.

- Rubbish and garbage will be picked up frequently from conveniently placed containers. It will be placed in "dumpster" type containers in an enclosure just outside the main entrance for removal by scheduled services and disposal in authorized sites. It is anticipated that vegetative matter will be chipped or shredded and properly piled and managed to generate mulch or compost for soil amendment.
- Regarding reuse of water and sewer lines installed by the military during World War II, it is concluded that this possibility should not be a factor in design of the park. Reasons for this conclusion are that; (a) these pipes have been in the ground over 25 years, have not been in use for many years, and is highly unlikely that they would be serviceable over a long period of time; (b) before any use of a pipe is contemplated, the condition of that pipe must be thoroughly investigated, with extensive tests for infiltration. All utilities will be connected to the public system serving the Waimanalo area.
- Construction noise and air pollution may temporarily adversely affect nearby residential areas during the construction period. Site preparation, grading, grubbing and clearing, utilities placement, building construction and finish work and cleanup will generate noise, dust and fumes, both on the site and on traffic routes leading to the site. Internal combustion engines will be the major contributors to

construction noise. Figure 16 indicates the approximate noise ranges of the various pieces of equipment that may be used. However, the use of impact equipment will be very minimal and it is anticipated that there will be no use of pile drivers. For short periods of time levels with a maximum of 96 dB(A) at 50 feet can be expected. There are several dwellings across 50 foot wide Aloiloi Street from the project. Very rarely would any equipment be operating closer than 100 feet from any dwelling. The period of construction is not expected to exceed nine months from the time of beginning. Though the work will generate dust and fumes, the contractor will be required to comply with Chapter 43 and all other applicable air pollution control laws, ordinances and regulations. He will also be required to properly store and dispose of all solid waste generated during the construction process. For this purpose, vegetative materials may be chipped or shredded and properly piled for conversion to mulch or compost for soil amendment. Dust control and esthetic measures for construction scars will include such measures as watering, mulch, planting or others, as appropriate.

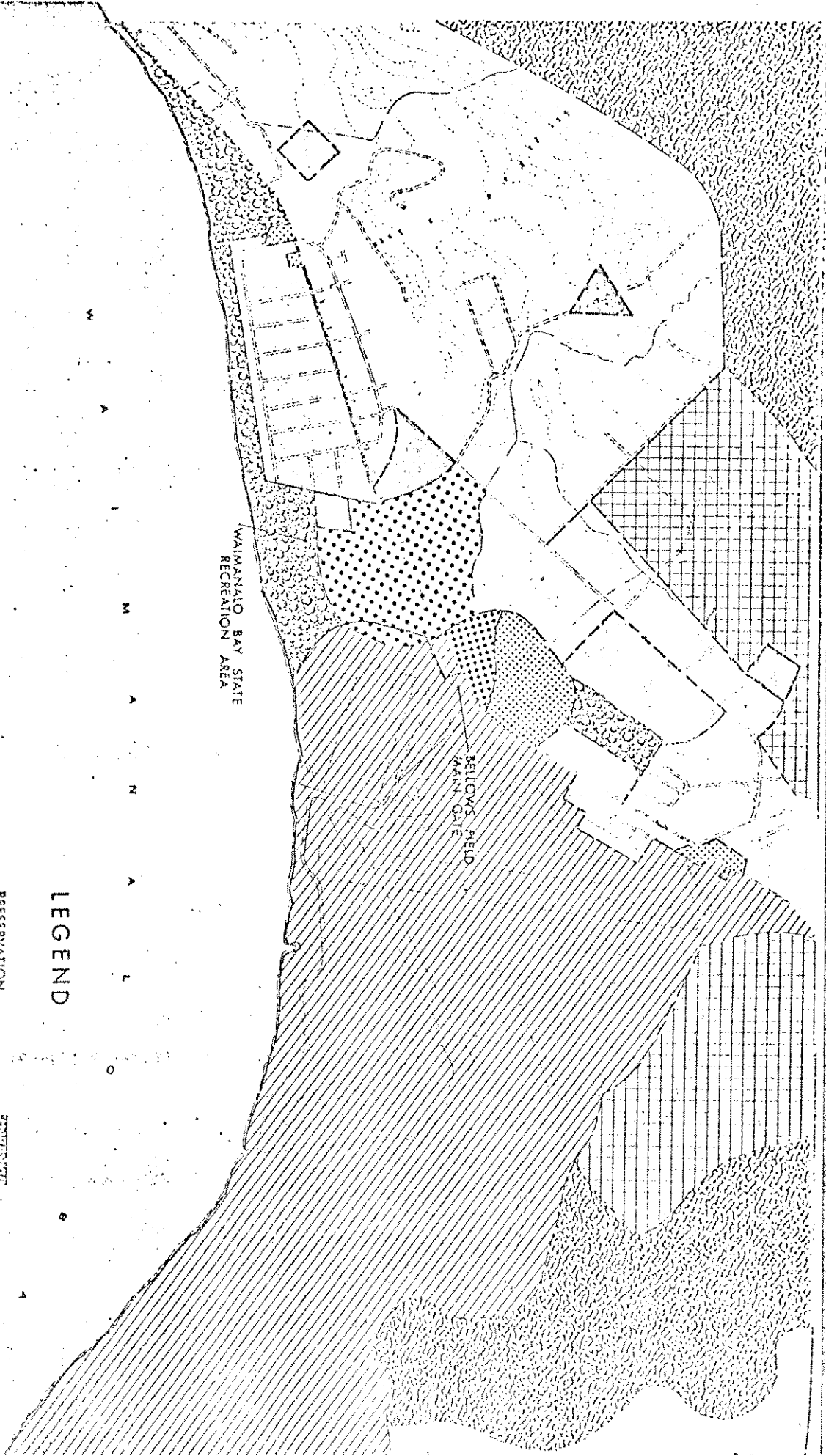
- It is assumed that flood control works being planned for Waimanalo Valley will solve the problem whereby a small portion of the project site is subject to flooding, and that no special flood control facilities will be required as part of the park development. Development plans for this area are being deferred.
- Boating will not be included in the first increment although the Harbors Division may want to develop some facilities near Inaole Stream for small boats, primarily sailboats. Long-range park plans include 500 lineal feet of beach here for this use. Boats will be prohibited from the remainder of the beach to avoid conflict with swimmers and surfers.



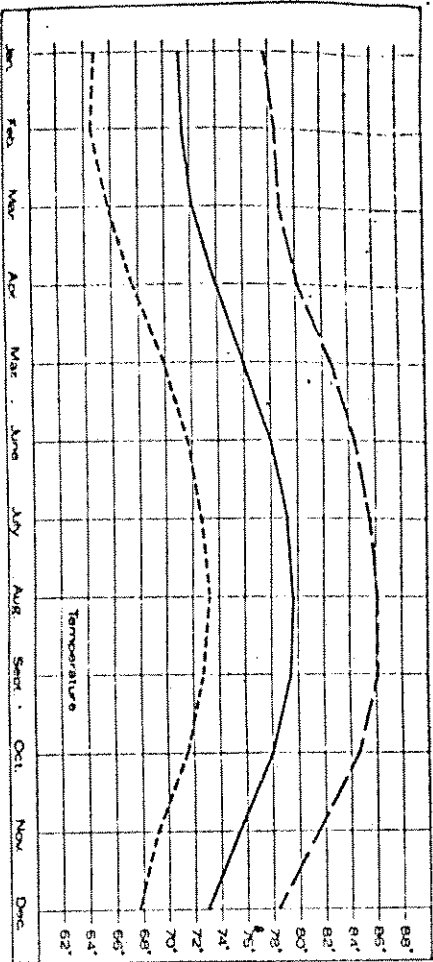
CURRENT ZONING

- PRESERVATION
AGRICULTURE
RESIDENTIAL
APARTMENT
LOW DENSITY
MEDIUM DENSITY
COMMERCIAL
PARK AND RECREATION
MILITARY
PUBLIC FACILITIES

LEGEND



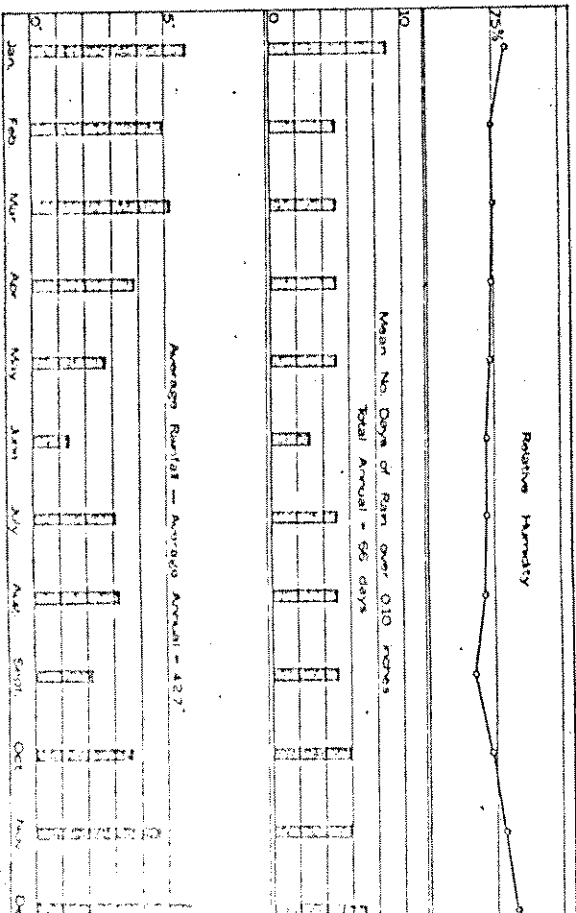
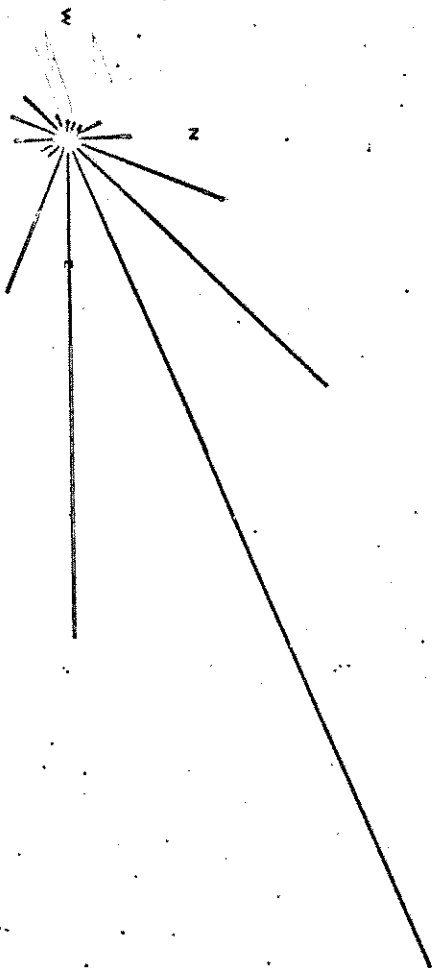
CLIMATIC DATA



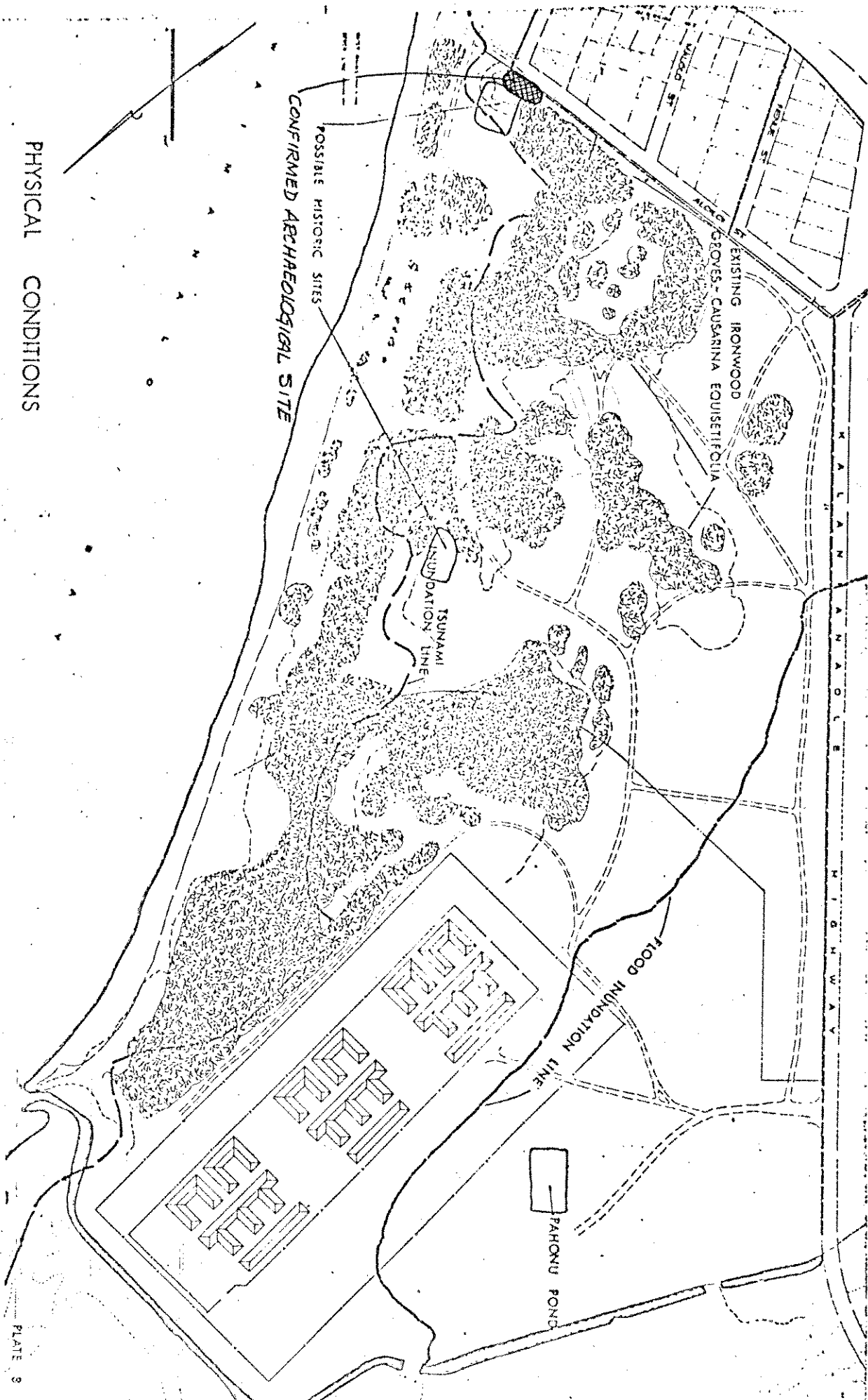
data from Karachi MCAS

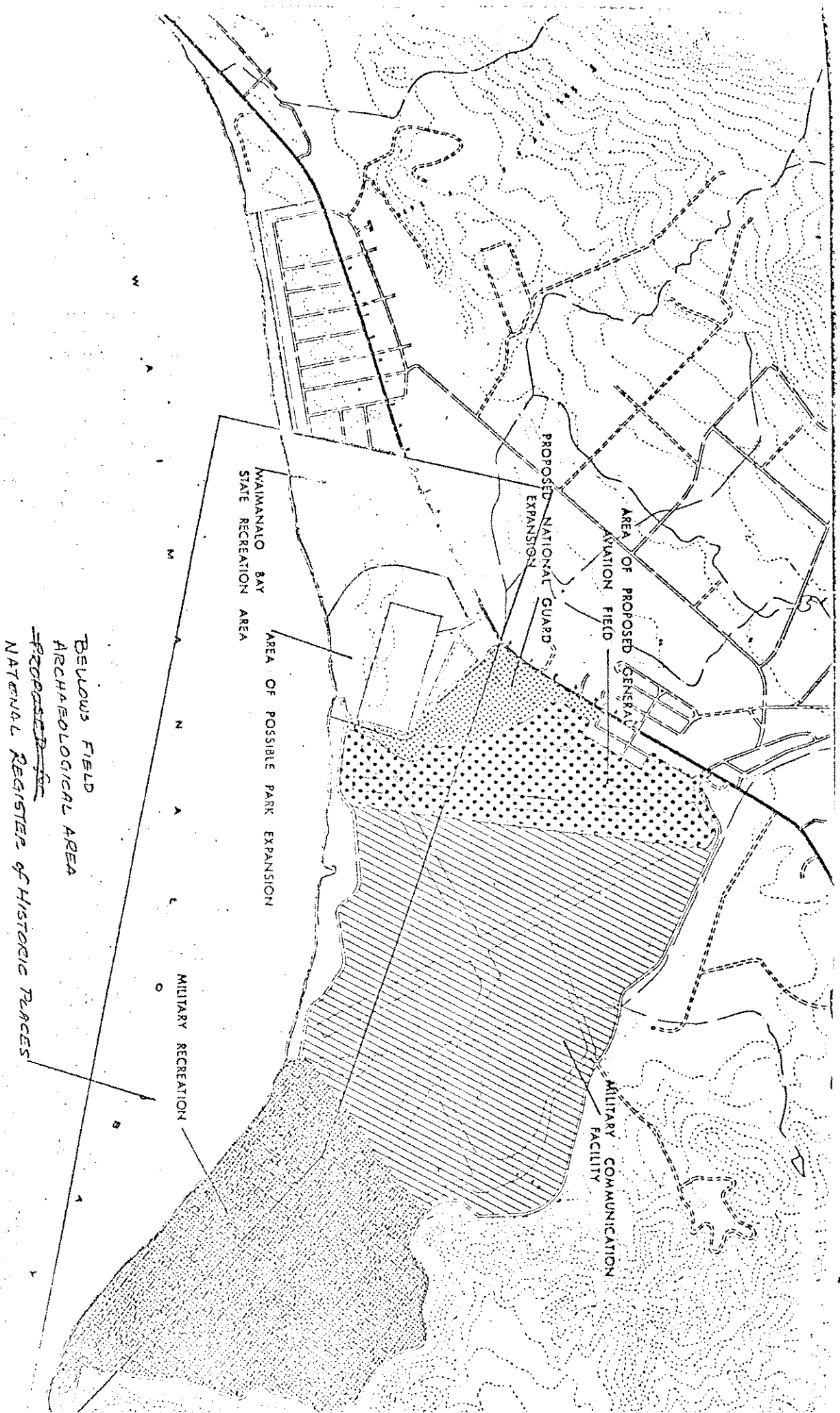
Wind Velocity & Direction (percent of time)

0 to 3 knots	9% of time
4 to 10 knots	42% of time
11 to 22 knots	48% of time
over 22 knots	1% of time



PHYSICAL CONDITIONS





GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

April 11, 1977

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

Dr. Richard E. Marland, Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Dr. Marland:

SUBJECT: Responses to the Draft Environmental
Impact Statement for the Proposed
Waimanalo Beach State Recreation Area


Reference is made to your letter of January 8, 1972
regarding comments on the subject draft statement.

The review comments and suggestions offered by various
agencies and civic organizations have been evaluated and incor-
porated into the Final EIS.

Written responses have been sent to all reviewers who
made substantive comments. Copies of these letters are attached.

We appreciate very much your careful review and con-
structive comments on the draft statement.

Very truly yours,


CHRISTOPHER COBB
Chairman of the Board

Atts.

JOHN A. BURNS
GOVERNOR

RECEIVED

'73 JAN 10 PM 1:05



STATE OF HAWAII

DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

OFFICE OF THE GOVERNOR

~~XXXXXXXXXXXXXXXXXXXX~~ 550 Halekauwila Street

~~XXXXXXXX~~ FROM Room 301

HONOLULU, HAWAII 96813

January 8, 1973

DIVISION OF
STANDARDIZATION
RICHARD E. MARLAND, PH.D.
INTERIM DIRECTOR
TELEPHONE NO.
548-6915
JAN 12 11 26 AM '73

The Honorable Sunao Kido, Chairman
Board of Land and Natural Resources
465 So. King Street
Honolulu, Hawaii 96813

ATTENTION: MR. JOSEPH SOUZA

Dear Mr. Kido:

Thank you for allowing us to review and process the draft environmental impact statement for the Proposed Waimanalo Beach State Recreation Area.

Based on the comments we have received through the distribution of the draft statement, it appears that although no one disputes the need for a park in Waimanalo, the comments suggest that further coordination and investigation may be necessary to fully establish a comprehensive park plan. Some of the major comments are indicated as follows:

Erosion: The comments received from the Outdoor Circle and the Land Study Bureau indicate that proper landscaping and vegetative cover may in the long run be more economical in terms of maintenance cost. Landscaping may also enhance the park and protect the park users.

Water Pollution: Both the Land Study Bureau and the Outdoor Circle suggest that measures should be taken to control flooding pollution from nearby streams. Siltation basins and debris catchers are methods which may abate the existing pollution to the shore waters.

Attendant Uses: Bikeways linking adjacent neighborhoods to the proposed park may be a means by which automobile usage may be reduced.

It is questionable whether resort or quality residential uses should be planned adjacent to the park. Such uses would block the public's view to the sea and perhaps intrude on the privacy of the park.

Page 2
January 8, 1972

Planning and Coordination: It should be pointed out whether the development of the park will in any way jeopardize any of the known or unknown archaeological sites at the park. Perhaps archaeological salvage work could precede development phases to eliminate the possibility of destroying unknown sites.

According to the Department of Transportation it is premature to assume that the highway will be relocated since engineering studies have not been conducted by the Highways Division. They also suggest that the compatibility of a General Aviation Airport be analyzed in the environmental impact statement.

The Planning Department indicates that the General Plan Revisions will be necessary to implement the proposed park. Perhaps review and coordination with the City Planning Department at an early stage will avoid possible conflicts and delays.

In finalizing the environmental impact statement for this project it would be beneficial to send a written response to the agencies and civic organizations offering comments, and a copy of this response be sent to our Office. In this way, those offering comments will be aware that their comments will be incorporated in the planning process also. Those agencies offering significant comments should be given a chance to review the final environmental impact statement.

It is commendable that the Department of Land and Natural Resources has provided for the environmental impact statement review at this early planning stage to allow agencies to express their concerns.

Thank you again for allowing us to comment on this environmental impact statement. Should you have any questions or comments please call us at 548-6915.

Sincerely,



RICHARD E. MARLAND
Interim Director

Enclosures

SUMMARY SHEET

Agencies Responding (the date of the letter is in parenthesis)

- *Congressman Spark Matsunaga (November 6)
- *Department of Traffic, City and County of Honolulu (November 2)
- H. David Tuggle, University of Hawaii (November 14)
- Department of Parks and Recreation (November 13)
- Land Study Bureau (November 2)
- Department of Public Works, City and County of Honolulu (November 2)
- Outdoor Circle (November 2)
- Department of Health (November 17)
- Planning Department, City and County of Honolulu (November 21)
- Department of Transportation (November 30)
- Department of the Air Force (December 20)

*Indicates No Comment

Agencies Offering Comments

- 1) David Tuggle: The archaeological survey was inadequate. Areas near the sand dunes are especially significant. High public traffic due to the park development may disturb archaeological sites.
- 2) Department of Parks and Recreation: Perhaps a description of the effects of the proposed project on physical and socio-economic factors should be incorporated in the statement.
- 3) Land Study Bureau: Residential use should be kept away from the park. The problems of pollution and wind are very real ones, and they have not been adequately provided for in the park plan. The problems of maintenance have to be elaborated upon. Also, perhaps night use could be obtained if adequate lighting were provided for.
- 4) Department of Public Works: The project site can be served by the new treatment facility, however, connecting sewers are not presently available. The surface waters will not be affected by floatable materials because of the treatment provided at the plant and the dilution incorporated in the design of the proposed outfall diffusers. Should the ground injection system fail, the State will be asked to construct an ocean outfall sewer of suitable depth and length. This is in agreement by the State and the City prior to the City assuming operation of the treatment plant. The use of the military's abandoned sewer lines will meet the City's approval only after extensive tests for infiltration.

- 5) Outdoor Circle: OEQC should expedite studies for using sewage effluent for material suitable for park use. In the long run proper soil preparation will reduce maintenance costs and assure healthier and more attractive growth. Measures should be taken to prevent silting of Waimanalo Bay. Streams running through the park should meet water quality standards which will permit their use for recreation. Adjacent areas should also be considered for recreational uses. Bikeways, wide walkways and buses should be planned in order to provide safe access to the park by other than auto users. The Outdoor Circle is opposed to the use of adjacent areas for resort or quality residential purposes. Residential use should be omitted from the park area. The use of coco palms and hala may not be effective as wind breaks.

- 6) Department of Health: It is assumed that the new comfort stations will be hooked up to the new sewage treatment facility.

All solid waste should be disposed at an approved disposal site. Air pollution caused by the construction activities should be described in the environmental impact statement. Dust control measures should be emphasized. All air pollution should be in accord with Chapter 43.

- 7) Planning Department: The State should crystalize their plan proposal in Waimanalo. General Plan revisions will be necessary to fully implement the proposed park. Coordination with the City should begin immediately. The environmental impact statement should clearly indicate what trees and vegetation will be removed and what will be retained. The General Plan indicates a highway widening proposal. It is assumed that widening will be extended into the portion fronting the park. It is suggested that Section IV be revised to be more descriptive to enable the reader to understand the extent of work to be performed.
- 8) The Department of the Air Force: They suggest a number of deletions and corrections to the final environmental impact statement. (See attached letter).
- 9) Department of Transportation: The assumption that the highway will be relocated is premature. Suggests that the compatibility of a General Aviation Airport with the short and long-range plan for this project be stated in the environmental impact statement.

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

April 11, 1977

Mrs. Baird Kidwell
Chairman, Parks
The Outdoor Circle
200 N. Vineyard Street
Honolulu, Hawaii 96817

Dear Mrs. Kidwell:

SUBJECT: Draft Environmental Impact Statement for
Waimanalo Beach State Recreation Area

Reference is made to your letter of November 2, 1972 to the Office of Environmental Quality Control on the above subject.

Your review comments and suggestions have been evaluated and incorporated into the Final EIS, a copy of which is enclosed. Some of the comments are further discussed below:

1. As to converting sewage treatment plant effluent to material useable for park use, studies thus far have shown a negative result at Sand Island, where excessive salt water intrusion into the sewer system makes the effluent and sludge use impracticable. However, Studies for Waimanalo conversion will continue. Also, use of chipping and composting facilities are being seriously considered.
2. The camping areas will have a centralized parking area with drive-in/drive-out access to the camp site for loading purposes. All vehicular traffic will be under management control.
3. In the initial development, all other parking facilities will be located near the highway, with walkways toward the beach facilities on a trail basis. It may be that either an interior transit system or access roads and parking closer to the beach may be required at some future date.

Mrs. Kidwell

- 2 -

April 11, 1977

Thank you very much for your review and comments.

Very truly yours,

Christopher Cobb
for CHRISTOPHER COBB
Chairman of the Board

Encl.
cc: OEQC



THE OUTDOOR CIRCLE 200 No. Vineyard, Honolulu, Hawaii 96817

November 2, 1972

Dr. Marvin T. Miura
Environmental Scientist
Office of Environmental Quality Control
State Capitol Building
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Statement for Waimanalo Beach,
State Recreation Area

Dear Dr. Miura:

The Outdoor Circle has the following comments to make on the
above subject:

1. Soils: (page 3) Given the poor soil conditions on some
of the project site and the shortage of top soil on Oahu, we
recommend that your office expedite all studies being made by
the State for converting sewage treatment plant effluent to
material usable for park lands. This is pertinent to Waimanalo,
Sand Island Beach Park, and Sandy Beach Park.

We ask that emphasis be given to the preparation of the/sandy
soil along the shoreline. We believe that in the long run,
proper soil preparation will reduce maintenance costs and
assure healthier and more attractive growth. Magic Island is
an example of how poor soil preparation inhibits growth and
raises the cost of maintenance.

2. Flooding and Pollution (pages 4 and 5): Any flood control
program must also be designed to prevent the silting of Waimanalo
Bay. Streams running through the park should meet water quality
standards which will permit their use for recreation. They
should be landscaped for this use as well and not enclosed in
concrete drainage canals.

3. Parks and Recreation (page 20): We believe that Waimanalo
State Park, Waimanalo Foothills State Recreation Area, the Mr.
Olomana area and the Pali area should be considered as one large
recreational unit for future planning with an interconnecting
trail system.

4. Highways (page 20): Wide sidewalks and bikeways along the
highway should be planned in order to provide safe access to the

park by other than auto users. It is our hope that a good bus system will also serve the park.

5. Potential Uses of the Site (pps. 22, 23, 24, 25): It is recognized that the Oahu General Plan is out of date. The Outdoor Circle recommends that the entire area from the highway to the beach be used for recreation. We are most opposed to the use of the land for resort or quality residential purposes. We recommend that residential use be omitted from the park area. In addition to the negative factors for housing on page 23 is the factor that it is important to visitors and residents that ocean views from the highway be protected.

6. Development Requirements for the Project Area (pps. 28 through 32): We are in accord with the basic concept and philosophy of the park plan with two exceptions. We raise a question as to the effectiveness of hala and coco palms as windbreaks. Coco palms at Sandy Beach have done poorly because of adverse wind conditions.

We believe that rather than assume that all visitors will come by car, that visitors should be encouraged to use bicycles, a bus system and walk from nearby communities. The study gives no recognition to bicycling as a form of recreation and neither bikeways or racks are provided within the park.

The automobile has devoured so much park land in the past that we believe every large park plan should examine carefully ways to reduce the amount of land devoted to roads and parking. For this reason The Outdoor Circle has opposed the provision of special camping slots for camper vehicles. We also have supported park plans which place parking near the park entrance with the rest of the area served either by service roads or an internal public transportation system. The State Parks Division has not to our knowledge given consideration to such an internal mini-bus system in any of its parks. None is suggested in the conceptual plan. We believe that it should have been considered and negative and positive factors weighed.

We thank you for the opportunity to review this draft statement. The Outdoor Circle has supported the development of a park in this area and is glad to see that the project is underway.

Yours sincerely,

Mrs. Baird Kiwell,
Chairman, Parks

Mrs. Robert Creps,
President

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB / CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

DIVISIONS
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

April 11, 1977

Honorable Fujio Matsuda, President
University of Hawaii
2444 Dole Street
Honolulu, Hawaii 96822

Dear Dr. Matsuda:

SUBJECT: Draft Environmental Impact Statement for
Waimanalo Beach State Recreation Area

Reference is made to the Land Study Bureau's letter of November 2, 1972 to the Office of Environmental Quality Control on the above subject. A copy of the letter is attached to facilitate your review.

The Land Study Bureau's review comments have been evaluated and incorporated into the Final EIS, a copy of which is enclosed. Some of the comments are further discussed below:

1. Settling basins in the stream have been considered, but they are known to have limited effect on such fine particulates.
2. The presently operating injector well system has been designed to remove 75-85% of the incoming floatable material and 95% of the persistent floatable material. Should this system fail, the State has agreed to construct an ocean outfall of suitable length, depth and diffuser design to prevent any pollution or esthetic problems.
3. The term "day use" is used to differentiate from "overnight use" and does not preclude evening use and a regulated closing time.

Thank you very much for the review and comments.

Very truly yours,

Edgar A. Hamasu

for CHRISTOPHER COBB
Chairman of the Board

Encls.
cc: OEQC

UNIVERSITY OF HAWAII

Land Study Bureau

November 2, 1972

TO: Dr. Marvin T. Miura
Environmental Scientist

FROM: *Harold L. Baker*
Harold L. Baker
Director, Land Study Bureau

SUBJECT: Draft Environmental Impact Statement for Waimanalo Beach, State
Recreation Area

These are the Bureau's combined comments on the Waimanalo Beach Environmental Impact Statement.

In general, the presentation reads like a consultant's feasibility study rather than an environmental impact statement. In this regard, these quotes from page 23 raise questions about the proposed use: "... and also this windward location is not ideal for resort development as compared to the leeward shores" and "The shoreline frontage would be ideally suited to quality residential development." Perhaps this is why it is suggested that part of the area be put in residential use. The consensus is that residential use should be kept out of the area if it is designated and developed for park use.

The problems of pollution and wind are very real ones and have not been adequately provided for. For instance, a large portion of the bay was discolored by discharge from Waimanalo and Inaole Streams. This effectively decreases the user appeal of the park. Yet the report recommends "... that these stream mouth protection walls, or jetties be retained and kept in repair" (p.14) which would permit further discharge directly into the bay. It is suggested that a sediment basin be constructed inland to store storm waters and allow discharge only after the sediments have settled. Or alternatively the stored water can be used for irrigating the grounds. Then, there is the unsolved problem of sewage outfall referred to on page 6. Specifically, there are two points: "the restricted circulation which occurs within deeper parts of Waimanalo Bay because of the submerged fringing reef" and "the persistence with which floatable materials would be carried onto the beach by the prevailing winds." Finally, there is the matter of the wind and the stability of the foreshore (sandy beach) plus the stability of the inland area and protection and comfort of would be users. The use of vegetation as suggested will hamper or restrict the use of the area for the purposes proposed.

The statement does not deal adequately with the question of park maintenance, including garbage disposal. Also, it has been suggested that restriction to day time use is shortsighted. With adequate lighting it would appear suitable for night use. People do picnic at night, particularly group picnics. Maintenance of security and control of vandalism would appear to be easier if the facilities were used rather than left vacant.

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

DIVISIONS
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

April 11, 1977

Mr. Edward Y. Hirata
Director-Chief Engineer
Department of Public Works
City and County of Honolulu
Honolulu, Hawaii

Dear Mr. Hirata:

SUBJECT: Draft Environmental Impact Statement for
Waimanalo Beach State Recreation Area

Reference is made to your letter of November 2, 1972
to the Office of Environmental Quality Control on the above
subject.

Your review comments pertaining to utilities, pollu-
tion and military sewer lines have been evaluated and incorpo-
rated into the final EIS, a copy of which is enclosed.

Thank you very much for your review and comments.

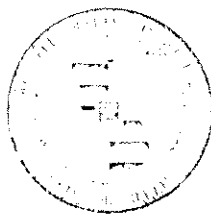
Very truly yours,

Edgar A. Hamasu
for CHRISTOPHER COBB
Chairman of the Board

Encl.
cc: OEQC

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

HONOLULU, HAWAII 96813



FRANK F. FASI
MAYOR

RICHARD K. SHARPLESS
MANAGING DIRECTOR

EDWARD Y. HIRATA
DIRECTOR AND CHIEF ENGINEER

ROBERT H. C. CHOY
DEPUTY DIRECTOR AND
DEPUTY CHIEF ENGINEER

DIR 72-192

November 2, 1972

Dr. Richard Marland
Interim Director
Office of Environmental Quality Control
State Capitol Building, Room 436
Honolulu, Hawaii

Dear Dr. Marland:

Subject: Draft Environmental Impact Statement (EIS) for
Waimanalo Beach, State Recreation Area

In response to your memorandum dated October 4, 1972, we have the following comments in regard to the subject EIS.

1. Utilities (pg. 4): The new Waimanalo wastewater treatment is now under operation. It is providing secondary biological treatment and post-chlorination. Discharge of effluent is through ground injection wells located on the plant site. The project site can be served by the treatment facility, however, connecting sewers are not presently (November 1972) available.
2. Pollution (pg. 6): We agree in principal with the statement made in regards to ocean circulation. The matter of floatable materials being carried onshore was considered and evaluated by the State's engineer in the design of the ocean outfall sewer. Floatable removal capability at the treatment plant will remove 75 to 85 per cent of the incoming material and 95 per cent of the persistent floatable materials. The aesthetic of the waters off Waimanalo ocean surface should be of great concern to all, however, the surface will not be affected by floatable materials because of the treatment provided at the plant and the dilution incorporated in the design of the proposed outfall diffusers.

There should be no concern now with the discharge of effluent into the Bay since effluent discharge is through

Dr. Richard Marland

- 2 -

November 2, 1972

injection wells. If the ground injection system fails, the State will be asked to construct an ocean outfall sewer of suitable length and depth. This is the condition agreed to by the State and City prior to the City assuming operation and maintenance responsibility of the treatment plant.

3. Use of sewer lines installed by the military (pg. 31):
The City will take a dim view of any attempt to reuse abandoned military lines except perhaps after extensive tests for infiltration.

We thank you for giving us the opportunity to review and comment on the statement.

Very truly yours,



EDWARD Y. HIRATA
Director and Chief Engineer

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

DIVISIONS
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

April 11, 1977

Mr. Ramon Duran, Deputy Director
Department of Parks and Recreation
City and County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Dear Mr. Duran:

SUBJECT: Draft Environmental Impact Statement for
Waimanalo Beach State Recreation Area

Reference is made to your letter of November 13, 1972
to the Office of Environmental Quality Control on the above
subject.

Please be assured that the effects of the proposed
project on the physical, socio-economic and cultural factors
of the site will be assessed before implementation.

A copy of the Final EIS is enclosed for your infor-
mational purposes.

Thank you for your review and comments.

Very truly yours,

Edgar A. Hamasu
for CHRISTOPHER COBB
Chairman of the Board

Encl.

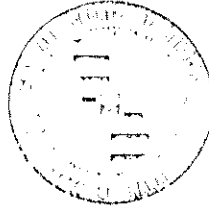
cc: OEQC

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814

FRANK F. FASI
MAYOR

RICHARD K. SHARPLESS
MANAGING DIRECTOR



YOUNG SUK KO
DIRECTOR

RAMON DURAN
DEPUTY DIRECTOR

November 13, 1972

MEMORANDUM

TO : DR. MARVIN T. MIURA, ENVIRONMENTAL SCIENTIST
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM : RAMON DURAN, DEPUTY DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR
WAIMANALO BEACH, STATE RECREATION AREA

This appears to be an adequate assessment of the existing physical, socio-economic, and cultural factors and of steps which should be taken for preservation of the shore line at the proposed site.

There is, however, no description or assessment of the effects of the proposed project on those factors.

Ramon Duran
RAMON DURAN, DEPUTY DIRECTOR

GEORGE F. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASII
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

DIVISIONS
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

April 11, 1977

Mr. David Tuggle
Department of Anthropology
University of Hawaii
2444 Dole Street
Honolulu, Hawaii 96822

Dear Mr. Tuggle:

SUBJECT: Draft Environmental Impact Statement for
Waimanalo Beach State Recreation Area

Reference is made to your letter of November 14, 1972 to the Office of Environmental Quality Control on the above subject.

Your review comments have been evaluated and incorporated into the Final EIS, a copy of which is enclosed.

For your information, an archaeological survey was recently conducted and the preliminary report is in the process of being finalized. A copy of this report will be forwarded to you upon its completion and acceptance. The survey will be followed by salvage work at the one known site as recommended in the preliminary report.

Thank you very much for your review and comments.

Very truly yours,

Edgar A. Hamasii
for CHRISTOPHER COBB
Chairman of the Board

Encl.
cc: OEQC

UNIVERSITY OF HAWAII

Department of Anthropology

Nov. 14, 1972

Dr. Marvin T. Miura
Environmental Scientist
Office of Environmental Quality Control

Dear Dr. Miura:

As an archaeologist at the University of Hawaii and as a member of the Coordinating Committee for Hawaiian Archaeology, I would like to comment on the following draft:

Draft Environmental Impact Statement for Waimanalo Beach,
State Recreation Area.

My comments are directed toward page 31 and Plate 8.

- 1) The archaeological survey of this general area was totally inadequate as a basis for making any of the statements regarding the archaeological remains. I know this from having been an observer to the survey undertaken by Pearson.
- 2) Unless there is personal knowledge of work done in an area it is actually impossible to evaluate a statement except in the most general terms. If there has been work carried out, as in the Waimanalo case, it should be more clearly referred to and the basis for the statements spelled out.
3. Further archaeological investigation should be undertaken in the total area, not just the "immediate vicinity" of the two previously located site areas.
4. There is absolutely no basis for the statements about importance of the sites and interpretative value. Any statements of importance by either an archaeologist or a reviewing board have to be only "holding" statements in terms of the known information. The known information in this case is slight. For the great majority of subsurface sites, statements of importance and interpretative value can only be made after more detailed investigations than was the case with these two site areas.
5. The above statements are particularly important in reference to a dune area. Dunes have been among the most destroyed zones of Hawaiian habitation and those that have been excavated have been shown to have the most valuable information regarding the first colonizations of the Hawaiian Islands by Polynesians. This has been the case in work near Waimanalo (Bellows Beach) as well as on other islands (Halawa, Molokai).
6. Lastly, I am disturbed about leaving "important" sites unexcavated in an area of high public traffic.
7. The archaeological impact needs reevaluation, in conclusion.

H. David Tuggle

2550 Campus Road - Honolulu, Hawaii 96822

Assistant Professor of Anthropology

H. David Tuggle

coconut trees along the shoreline and Beach Naupaka (*Scaevola frutescens* var. *sericea*) [see Plate 8]. The remaining areas are open sand or low grass.

Utilities

The project site is well served with public water supply, power and telephone. A new sewer treatment plant is to be in use within a few months and this will serve the future park and adjacent urban developments. Utilities location and sizes are shown on Plate 8. All proposed park facilities will be connected to the public utility services.

Historic Considerations

Over the past three years, three areas of possible archaeological importance have been discovered at Bellows Field. Two of these are within the project area. The third is in the military portion of Bellows Field and contains evidence of habitation about 600 A.D. Further investigation is recommended and in the process of park development the potentially significant archaeological areas will be set aside for detailed study. Several heiaus have been found mauka of the highway. All of these historic sites are illustrated on Plate 8.

Development Hazards

Flooding

The Inaole stream is an intermittent water course which drains the agricultural areas south of Waimanalo town. The stream was rerouted to the northwest in 1960 to pass around the Nike missile site construction, but its mouth was left unchanged. Limited tidal circulation occurs near the mouth where a shallow pond exists at times of low stream discharge.

Flooding has frequently occurred along the middle reaches of this stream, particularly inland of Kalanianaʻole Highway which apparently has too limited openings for

toward the beach so that pedestrian circulation between the beach, beach-picnic sites, and parking lots will be separated from vehicular traffic. The Aloiloi Street parking will generate additional traffic on a residential street during the day. Kalaniana'ole Highway will probably also receive more traffic and congestion at the park entrance. It is assumed this highway will ultimately be relocated. It is also assumed that all park visitors will come by car and convenient parking will be a limiting factor in maintaining the desired number of users.

Exploratory
Recent survey
completed -
recommends
salvage of one
s.i.e.

- Archaeological investigation will be undertaken prior to any construction in the immediate vicinity of the two potentially important historic areas discovered in the surface survey. The first stage development plan indicates one site of relatively minor importance is located within a proposed parking area. This site will be salvaged. The other site, which is much more important, probably will not be disturbed and thus will not be salvaged at this time. Neither of these sites have any known interpretive value and the sites will be destroyed in the process of salvaging them of scientific information.
- Regarding re-use of water and sewer lines installed by the military during World War II, it is concluded that this possibility should not be a major factor in design of the park. Reasons for this conclusion are that; (a) these pipes have been in the ground over 25 years, have not been in use for many years, and is highly unlikely that they would be serviceable over a long period of time; (b) in the event there are existing lines which will fit the distribution or connection system

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

April 11, 1977

DIVISIONS
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

Honorable George Yuen, Director
Department of Health
State of Hawaii
Honolulu, Hawaii

Dear Mr. Yuen:

SUBJECT: Draft Environmental Impact Statement for
Waimanalo Beach State Recreation Area

Reference is made to your letter of November 17, 1972
to the Office of Environmental Quality Control on the above
subject.

Your review comments and suggestions pertaining to
water pollution, noise, solid waste and air sanitation have
been evaluated and incorporated into the Final EIS, a copy of
which is enclosed.

Thank you very much for your review and comments.

Very truly yours,

Edgar A. Hamasu
for CHRISTOPHER COBB
Chairman of the Board

Encl.
cc: OEQC

JOHN A. BURNS
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH

P. O. BOX 3374
HONOLULU, HAWAII 96801

November 17, 1972

WALTER B. QUISENBERRY, M.P.H., M.D.
DIRECTOR OF HEALTH

WILBUR S. LUMMIS JR., M.S., M.D.
DEPUTY DIRECTOR OF HEALTH

RALPH B. BERRY, M.P.H., M.D.
DEPUTY DIRECTOR OF HEALTH

HENRI P. MINETTE, M.P.H., DR. P.H.
DEPUTY DIRECTOR OF HEALTH

To: Office of Environmental Quality Control
From: Acting Director of Health
Subject: Draft Environmental Impact Statement at Waimanalo Beach State Recreation Area

We have reviewed the draft statement and submit the following comments:

WATER POLLUTION:

1. The proposed Waimanalo Beach State Recreation Area does not discuss provisions for any comfort stations. It is presumed that these comfort stations will be connected by sewer lines to the new public sewer treatment plant.
2. If the old utility lines are used, proper procedures shall be taken to insure that the water and sewer lines can be operational.

NOISE:

We do not anticipate problems in noise after construction. However, during construction all vehicles must meet provisions of the Vehicular Noise Control regulations.

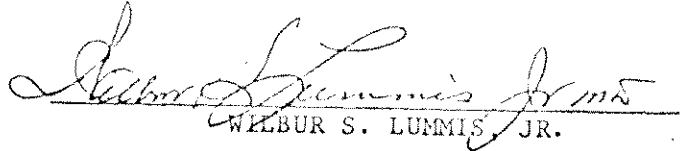
SOLID WASTE:

1. All solid waste generated during the site preparation and construction phases should be removed from the site and disposed at an approved disposal site.
2. All solid waste generated from the operation of this state beach park should be properly stored and removed from disposal at an approved disposal site.

AIR SANITATION:

1. The environmental impact statement does not adequately describe the types of air pollution caused by the construction activities for site preparation.
2. Dust control techniques should be emphasized due to the fact that the soil makeup of the proposed site and that the onshore winds are predominant 85% of the time.

3. Construction contracts should specify that the contractor minimize any causes and/or potential causes of air pollution in accordance with Chapter 43, Air Pollution Control. Proper planting should be required where construction has exposed and/or upset the topsoil of the environment.


WILBUR S. LUMMIS, JR.

cc: Occupational Health
Sanitation
Air Sanitation

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND AND NATURAL RESOURCES

EDGAR A. HAMANO
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PAPERS
WATER AND LAND DEVELOPMENT

April 11, 1977

Mr. Robert Way, Planning Director
Department of General Planning
City and County of Honolulu
Honolulu, Hawaii

Dear Mr. Way:

SUBJECT: Waimanalo Beach State Recreation Area
Draft Environmental Impact Statement

Reference is made to your letter of November 21, 1972 to the Office of Environmental Quality Control regarding your comments on the subject draft statement.

Your review comments have been evaluated and incorporated into the Final EIS, a copy of which is enclosed. Some of the comments are further discussed below:

1. No vegetation will be removed from the shoreline and any additional planting will be for the purpose of stabilization.
2. There is a possibility that the highway may be rerouted mauka, bypassing the proposed park area, but in the event the highway is not rerouted, plans allow for a widening of the existing right-of-way.

Thank you very much for your review and comments.

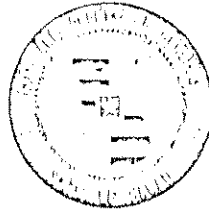
Very truly yours,

Christopher Cobb
CHRISTOPHER COBB
Chairman of the Board

Encl.
cc: OEQC

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU

629 POHUKAINA STREET
HONOLULU, HAWAII 96813



FRANK F. FASI
MAYOR

ROBERT R. WAY
PLANNING DIRECTOR

GEORGE S. MORIGUCHI
DEPUTY PLANNING DIRECTOR

November 21, 1972

P10/72-4727

MEMORANDUM

TO : DR. RICHARD MARLAND
INTERIM DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM : ROBERT R. WAY, PLANNING DIRECTOR

SUBJECT : WAIMANALO BEACH STATE RECREATION AREA
DRAFT ENVIRONMENTAL IMPACT STATEMENT
AUGUST 11, 1972

We appreciate the opportunity to review the draft impact statement and offer the following comments:

1. The impact statement basically serves to emphasize the need for the State agencies such as the Department of Land and Natural Resources and Hawaiian Homes Commission to crystallize their thinking and officially present proposals for the long-range coordinated development of Waimanalo Valley to be adopted by City ordinance.

The proposals will significantly change current policy of the City for the development of these areas, and they must be examined from this perspective. We already indicated to the Department of Land and Natural Resources in our memorandum of September 24, 1971 (our A-95 review): that General Plan revisions will be required to implement new proposals.

The environmental impact statement indicates (p.2):
"There is an ongoing planning program by the Department of Land and Natural Resources for Waimanalo Valley, and this study is being coordinated with that program."

Dr. Richard Marland
November 21, 1972
Page 2

This being the case, what is available should be coordinated with the Planning Department and the community through established procedures and processes.

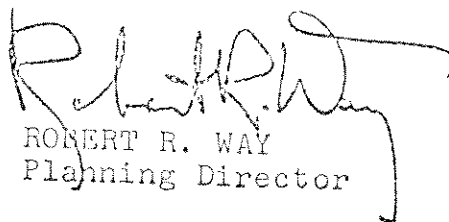
2. The draft environmental impact statement indicates (p. 10 et seq) there is a sensitive equilibrium in the existing ecosystem, particularly along the shoreline, and that the removal of vegetative cover can also upset the present balance.

Materials submitted to us for review, however, do not clearly indicate what trees and vegetation will be removed and what will be retained and how this will affect the present equilibrium.

3. Statements under "Highways" on page 20 should be expanded to include the impact of future widening of Kalaniana'ole Highway. The General Plan calls for highway widening. Work is progressing in stages from Waimanalo Junction toward Waimanalo town. It is assumed that widening will be extended so that the portion fronting the proposed park area will be improved. The schedule for this improvement should be indicated.

It is suggested that Section IV be revised to make it relevant to this subject. What exists, what is possible and what is probable should be clearly indicated. Merely listing studies, potential projects and nearby facilities is insufficient. A revision of this would be in keeping with our comment 2 above.

We hope our comments will help.


ROBERT R. WAY
Planning Director

RRW/CT/RWR:cag

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB - CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

April 11, 1977

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

Honorable E. Alvey Wright, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Admiral Wright:

SUBJECT: Draft Environmental Impact Statement for
Waimanalo Beach State Recreation Area

Reference is made to your letter of November 30, 1972
to the Office of Environmental Quality Control on the above
subject.

Your review comments have been evaluated and incorpo-
rated into the Final EIS, a copy of which is enclosed.

Thank you very much for your review and comments.

Very truly yours,

Edgar A. Hamasu
CHRISTOPHER COBB
Chairman of the Board

Encl.
cc: OEQC



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

IN REPLY REFER TO:

ATP 8.2038

FUJIO MATSUDA
DIRECTOR
E. ALVEY WRIGHT
DEPUTY DIRECTOR
LAWRENCE F. O. CHUN
DEPUTY DIRECTOR
MUNNY Y. M. LEE
DEPUTY DIRECTOR
DOUGLAS S. SAKAMOTO
DEPUTY DIRECTOR

November 30, 1972

MEMORANDUM

TO: DR. RICHARD E. MARLAND, INTERIM DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: FUJIO MATSUDA, DIRECTOR
DEPARTMENT OF TRANSPORTATION

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
WAIMANALO BEACH, STATE RECREATIONAL AREA

We have reviewed the above subject document and have the following comments to make:

1. Engineering studies for relocating Kalanianaʻole Highway in Waimanalo have not been conducted by the Highways Division. Therefore, to concur in the assumption that the highway will be ultimately relocated is premature.
2. Page 20, General Aviation Airport - By inference, the report does not object to the use of Bellows Field as a General Aviation Airport. We suggest that the compatibility of such an airport with the short- and long-range plan for this project be stated in the EIS.
3. Page 22, paragraph 3 - We suggest this paragraph be deleted in its entirety because it is not relevant to the area for recreational use. A noise study conducted by the Airports Division shows that noise will have negligible effects on this recreational area.

E. Alvey Wright
for FUJIO MATSUDA

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

DIVISIONS
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

April 11, 1977

Mr. Ben Kofa, Deputy Director
of Civil Engineering
15th ABW/DE
Hickam Air Force Base 96553

Dear Mr. Kofa:

SUBJECT: Draft Environmental Impact Statement for
Waimanalo Beach State Recreation Area

Reference is made to your letter of December 20, 1972
to the Office of Environmental Quality Control on the above
subject.

Your review comments and suggested changes have been
evaluated and incorporated into the Final EIS, a copy of which
is enclosed.

Thank you very much for your review and comments.

Very truly yours,

Edgar A. Hamaguchi
for CHRISTOPHER COBB
Chairman of the Board

Encl.
cc: OEQC

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 15th AIR BASE WING (PACAF)
APO SAN FRANCISCO 96553



REPLY TO
ATTN OF: DE

20 DEC 1972

SUBJECT: Draft Environmental Impact Statement

TO: Office of Environmental Quality Control
Office of the Governor
550 Halekauwila Street
Tani Office Building, Third Floor
Honolulu, Hawaii 96813

1. Reference is made to your letter of 4 Oct 72, subject as above.
2. This office has the following comments to render relative to the draft environmental impact statement for Waimanalo Beach, State Recreation Area:
 - a. Delete sections of pages 14 and 15 as shown on attachment 1.
 - b. Page 22, first paragraph: Besides communication and recreation, Bellows AFS is used for Marine amphibious training all year round. Change the last sentence of this paragraph to read: "The Nike Missile Site between the State Park project and the airstrip is now being used for other military purposes and its projected land use is for light industrial."
 - c. Page 24, fourth paragraph: line 4, add the words "and safety" after the word "noise."
 - d. Page 25, second paragraph: line 6, add "camping."
 - e. Page 30: Delete lines 12 and 13. "Campers will not be permitted to use the buffer strip of Nike Site."
 - f. Page 3: The Nike Site is not an abandoned site. It is now used for other military purposes.

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED

1 Atch
Pages 14 & 15 of Draft Env Impact Stmt

It is recommended that no constructions be undertaken for the purpose of increasing beach stability.

Jetties have been built out on both sides of the two streams which cross the Waimanalo Beach, the Inaole stream at the northwest end of Sherwood Forest and the Waimanalo stream within the Bellows Air Force Station. The purpose of these jetties is to stabilize the mouths of these streams and prevent their wandering laterally along the beach. These jetties extend sufficiently far offshore to prevent sand bypassing them when carried by longshore currents, and some asymmetry can be expected to develop in the amount of sand deposited on either side as wave and current directions change. Yet examination of the adjacent beaches and observations of aerial photographs show any long-term asymmetry to be slight, attesting to the major sand movement being normal to the beach. The stabilization of the place where the stream discharges adds stability to the adjacent beach areas and to their immediate nearshore environment.

It is recommended that these stream mouth protection walls, or jetties be retained and kept in repair.

The wall along the south side of the Inaole stream was breached during high surf occurring first in 1968 and later in 1969 and 1970. Some sand was carried inland and now partially blocks the lower portion of the stream channel. The concurrent removal of some vegetation along this wall has exposed sand banks to wind erosion and some sand is being lost inland as well as into the stream channel. This bank should be repaired by re-establishing its former line and assisting vegetation to grow along it. The seaward face of the bank will need some armor stone to protect it. This would best be replaced with such considerations of stone size and openness of structure as to increase the dissipation of wave energy when waves break

against it. Such design practice does not appear to be being followed in the seawall construction presently underway near the northern limit of the Bellows Air Force beach, and presumably was not in the earlier jetty constructions. Improved design from constructions to maintain or repair the jetties, along the stream banks should reduce the frequency and costs of repairs to these structures.

The rock underlying the beach has a slope similar to that of the sand surface. The sand cover is generally 6 to 10 feet thick. Any permanent constructions made on or across the beach should extend down to this underlying rock. This construction practice does not seem to be rigidly followed in some of the rock structures built in the Air Force area and threatens eventual undercutting of such structures.

The foreshore generally shows shallow concave depressions 30 feet or more in width facing seaward. These cusps indicate the frequency of minor offshore currents, weak rip currents, which carry back the excess water piled against the shore by waves. They are a natural part of the dynamic interaction between the beach sand and that held in reservoirs on the reef flat.

Nearshore

Immediately offshore sand covers the bottom along this entire beach. Large patches of sand are interspersed with area of rocky bottom across the wide reef flat. Some rock areas are covered with rounded cobbles. Often the rocky bottom areas nearest shore are densely covered by short stands of algae and seaweed. There is a sufficiency of sandy bottom areas to provide for the needs of swimmers. It is not recommended that dredging or other bottom clearing be undertaken along this beach park.

Over the further parts of the reef flat surge channels